

Royal Institution of Great Britain.

WEEKLY EVENING MEETING,

Friday, March 2, 1906.

THE RIGHT HON. LORD ALVERSTONE, G.C.M.G. M.A. LL.D. F.R.S.,
Vice-President, in the Chair.

RICHARD CATON, M.D. F.R.C.P.,
of Liverpool.

Hippocrates and the Newly Discovered Health Temple at Cos.

After exhibiting three portraits of Hippocrates, and giving a brief sketch of his history, his work at Cos, his influence in freeing medicine from ancient superstition, his marvellous powers of observation and scientific insight, and his lofty conception of the unselfish aims which ought to characterise the physician, Dr. Caton showed photographs of Cos, and of the ancient tree under which, according to tradition, Hippocrates was accustomed to give medical advice and counsel to the people in the town of Cos. He then traced the sacred way which leads to the Asklepieion, or Health Temple. Before describing the remains of this great Coan sanctuary, which the labours of Dr. Rudolph Herzog, of Tübingen, have brought to light during the past two years, Dr. Caton briefly recounted the principal temples and sanitary departments, which were comprised in such of the Greek Asklepieia as have thus far been excavated, and especially at Epidaurus.

The great Health Temple of Cos was situated two miles from the sea, at an elevation of about 320 feet, at a point where the range of mountains, which rises on the south coast of Cos to a height of about 2800 feet, springs from the gentle slopes of the plain.

Earthquakes, with disturbance of the soil, the growth of vegetation, the evil deeds of the lime-burner, together with the building of various churches and mosques, had so completely masked the site that, until three years ago, not a living soul knew that the Παναγία τῆς Τάφου, with the gardens round it, was the site of the famed Asklepieion. Two British archæologists, Mr. W. R. Paton and Mr. E. L. Hicks, while searching Cos for inscriptions, with much acuteness suggested this as a probable site. The situation is a remarkably beautiful one, commanding delightful views on all sides. Standing on three step-like terraces, the buildings at present excavated cover an area of about 180 metres from north to south, and about 129 from east to west. The spectator sees to the south the range of mountains I have mentioned; to the north the verdant plain of Cos, with the white houses and trees of the town to the

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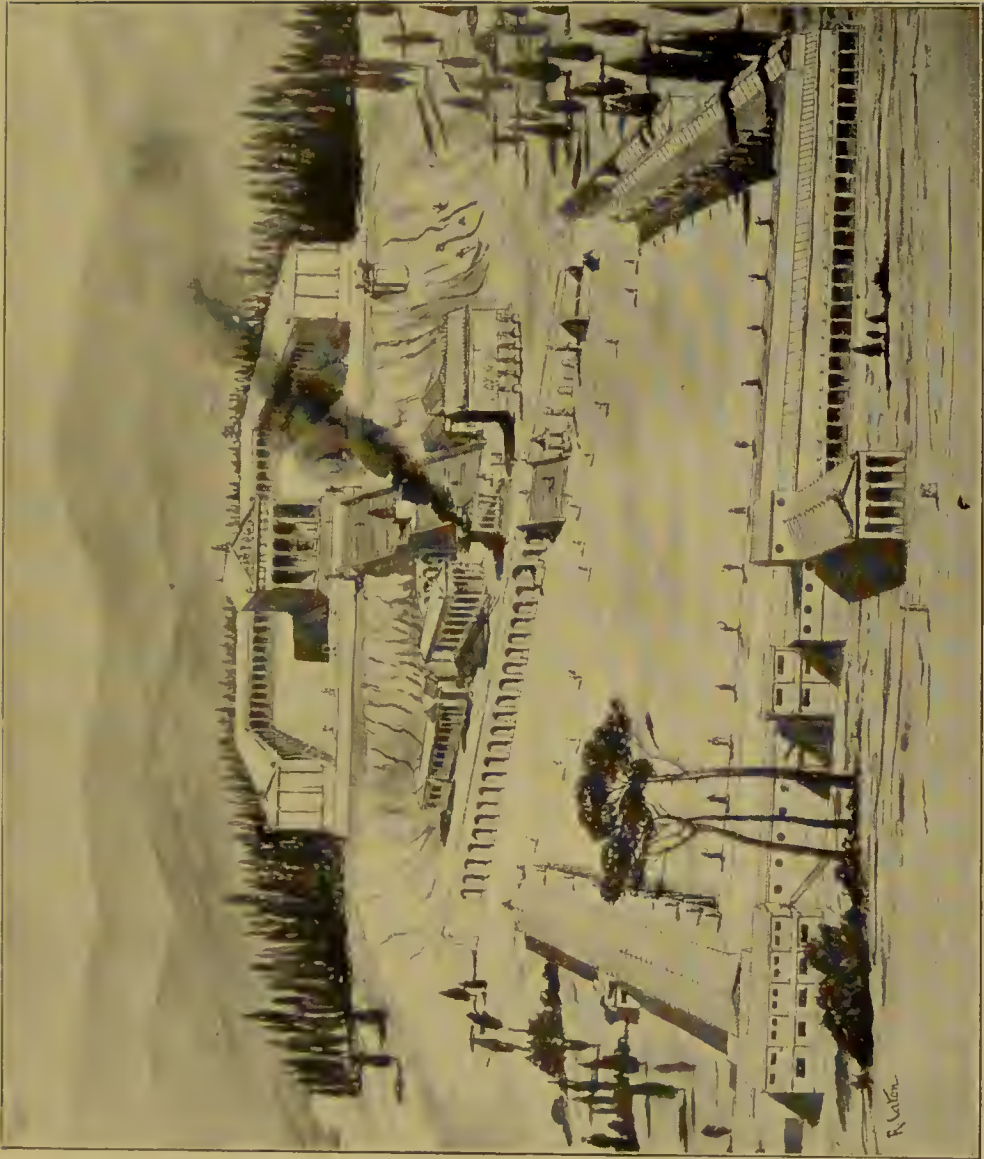
right, and the wide expanse of turquoise sea dotted by the purple islands of the Ægean ; and the dim mountains about Halicarnassus to the north-east.

Of course, little remains of the sacred precinct excepting foundations, but from these, and the architectural fragments which remain, it is not difficult to reconstruct in one's mind the *ensemble* of beautiful buildings which existed 2000 years ago.

The restoration which is annexed gives some idea of the grouping of the temples and stoa in three terraces on ascending levels.

In the foreground is a three-sided stoa, or portico, having irregular buildings at a lower level, adjacent to its outer border, all round. This stoa is approached by a Doric propylæa, or porch. Within this porch there are signs of certain great tanks, or basins, and of an aqueduct supplying them. They were probably for the preliminary ceremonial ablutions. The Asklepiadæ were to be congratulated upon this usage. (Their successors would not be sorry if a preliminary cleansing or lustration of soap and water were required from some of the votaries of the out-patient room in our modern Asklepieia.) The buildings adjacent to the left wing of this great stoa were occupied by an extensive series of baths, mostly reconstructed in Roman times. Here the hot and cold douches of which Hippocrates speaks, the frictions and affusions of water of various temperatures, the inunction of "smegma," a sort of hot, semi-fluid soap, and the applications of sponge and strigil took place. Hippocrates believed greatly in the remedial uses of water, and here, doubtless, hundreds of his patients have submitted to the hydrotherapia of the time. Probably the remainder of these buildings on the north served as waiting-rooms, consulting and operating rooms, the "Iatrium," with its store of instruments, of which Hippocrates speaks, including the "scamnum," or bench for reducing dislocations. Here, probably, would be the dispensary, where were prepared the tisanes, the hellebore, the arsenic, the cantharides, and other drugs he names ; here, also, the library. Here may have been the rooms devoted to teaching, for a most important medical school existed at Cos. Here, I assume, he wrote his careful notes of cases. Most likely Hippocrates kept in these rooms the skeleton which he afterwards gave to the oracle of Delphi.

Here, also, may have been the Deipneterion, or room for meals, and the culinary department, where the special diet to which the Coan school gave so much attention was made ready, where, probably, was prepared the "cygeon," that curious mixture of cheese, honey and wine, which we first read of as being given by Circe to Ulysses, but which, notwithstanding this discouraging origin, may have proved a nourishing form of food for certain of the sick. Here, perhaps, was the winestore, with the Chian and the strong Cretan vintages, which Hippocrates so rarely gave *undiluted*. He was a strong believer in the truth that much strong wine weakened



rather than invigorated. At the south-west corner of the stoa were situated the sanitary arrangements of the precinct. The area enclosed by the stoa was probably a palaestra, where the gymnastic part of the treatment was carried out. We know that Hippocrates was the pupil, not only of his father, Heracleides, the physician, but also of Herodicus, who relied more upon exercise and gymnastics than upon any other treatment. Hippocrates tells us he believed that Herodicus killed some of his patients who had febrile or acute diseases by insisting on too violent exercises. While carefully avoiding this error, Hippocrates prescribed exercise largely in suitable cases. Could we transport ourselves backwards in time to the year 400 before Christ, we might have seen in this palaestra such sights as the gouty man casting the discus, walking or running round and round the stoa, or going through the sword or spear exercise, grumbling meanwhile at his prescribed meagre diet, or the weakly and ill-developed youth running, throwing the javelin, or engaging in gentle wrestling, drinking the "red water," and taking a full and rich diet.

Within the portico were many inscribed wall slabs, some referring to the inviolability of the precinct, others bearing wise maxims in regard to health.

If Dr. Ermerins is correct, many of these existed prior to the time of Hippocrates, and were quoted in his "prophetics" and "praenotiones." Probably in later times many of the aphorisms and other wise admonitions of Hippocrates were added to the number. We know that at the neighbouring Asklepieion of Cnidus similar precepts termed the "Cnidian sentences," written by the physician Euryphon, were in like manner exposed to view. The records of honours gained by Coan physicians were also conspicuously placed here.

The south side of the quadrangle consisted of a lofty wall with buttresses supporting the second terrace. This wall was interrupted by a flight of steps up to the second terrace, and by several drinking fountains, one in particular, the sacred spring, of which, no doubt, every patient was made to drink freely.

Ascending the stairs to the middle terrace we find ourselves in the most ancient part of the precinct, where the various buildings were arranged with much irregularity. Near the centre of the terrace stands the great altar, a structure measuring 12 metres by 8, approached by steps on its western side. In some respects it reminds the visitor of the great altar of Pergamon, though it is less in dimension. There is difficulty in judging from the remains what its exact details of construction were, but it appears to have been surrounded by a colonnade.

There was a close association between Cos and Alexandria, and I confess to the hope that a shrine of Iemhotep, the Egyptian God of Medicine, would have been found here (as there is reason to believe

it has at Epidaurus), but none has as yet been discovered. Another link, however, connects this altar with Alexandria. Herondas, the Alexandrian poet of the third century B.C., wrote eight "Mime-iambics," comic dramatic poems, the scenes of which are all laid at Cos. The action of the fourth of these takes place in front of this altar. Two Greek ladies, accompanied by their slaves, desire to offer a cock to Asklepios. During the sacrifice they chat with the pyrophorus, or sacristan, who shows much enthusiasm on the subject of fees, and they comment on certain works of art, a sacrificial procession by Apelles, and a figure of a small boy strangling a goose, which are placed near the altar.

Quantities of terra-cotta lamps and figurines were found round this altar.

To the west of the altar stands an Ionic prostyle temple, 16 metres in length and 8 in breadth. Its dedication is unknown. But there is evidence from inscriptions that a temple of Apollo formerly existed here; Apollo being one of the greater gods would have his temple facing the east, and this temple is the only one in the whole precinct which has the correct orientation for so great a deity. The worship of Apollo which perhaps took place here was probably superseded by that of Asklepios in later times. So this temple may have become the Asklepieian shrine until the date when the great temple was erected on the upper terrace. It contains one curious feature: a large stone cyst or coffer composed of massive marble blocks forms a portion of the floor of the naos; it is about 5 feet long by 4, and is about 3 feet deep. The side blocks were connected by strong metal clamps. The weighty block forming the lid is pierced in its centre by an aperture some 6 inches broad. Dr. Herzog thinks it is a thesaurus, or treasury. But the difficulty of removing the massive cover (which has no rings or handles for such a purpose) would render it almost impossible to deposit or remove such treasure.

It is known that at every Asklepieion the sacred serpents were worshipped as the incarnation of the god. They were tame and harmless, and were free to wander at will throughout the precinct. They probably were supplied with a den or hiding place to which they could retire, and it would obviously be convenient if this den were adjacent to the small altar where sacrifices were offered to them, and where they were fed with the sacrificial cakes, or "popana," by their votaries. At Epidaurus, a curious dark labyrinthine vault was provided beneath the thymele, or sacrificing place. This I believe to have been the ophiseion, or serpent house, from which the serpents emerged close to the altar when the sick came to sacrifice and to feed them. We know from a reference in the *Plutus* of Aristophanes that the serpents were accustomed to be summoned by the sound of a whistle. A somewhat similar structure, on a smaller scale, exists at the Athens Asklepieion. There are, however, other theories as to the

explanation of these buildings, but none can be said as yet to be proven.

To me the above explanation seems the most probable. I think it likely that the temple on the west of the altar, after ceasing to be the special shrine of Asklepios, continued to be the thymele, or sacrificing place, for the sacred serpents, and this coffer in the floor was the ophiseion, or snake house. Above or near it would stand a stone or bronze tripod altar, on which the incense and other bloodless sacrifices would be offered. Here the sick would come, accompanied by a priest, to offer their sacrifice and feed the serpents with popana, or sacrificial cakes. To the north of this temple stood a building divided into rooms, reconstructed in Roman times, which is thought to have been a house for the priests. Passing now to the east of the great altar, we come to a Doric peripteral temple, the most ancient in the precinct. It measures 16 metres in length by 10 in breadth, has six columns at each end, and nine on either side; it faces west. It is known that there were shrines of Hygeia, Aphrodite, Helios, Athena, the Fates, and Hemera in the precinct, perhaps it was dedicated to one of these. To the north of this temple, adjacent to the great flight of steps, a lofty supporting wall was built against the face of the cliff. Between it and the peripteral temple is a large exedra, or semicircular seat, where doubtless the convalescents sat to enjoy the glorious view and the sweet sea and mountain breezes. On the east of the peripteral temple there remains a series of irregular foundations on which stood probably small temples and shelter porches, the latter of which would serve the same purpose as the exedra. No colonnades are found on this second terrace.

Ascending the great flight of steps, and passing on the way a large base which may have supported a colossal statue, we reach the highest terrace, and find facing us the great temple of Asklepios. This is a newer building, dating from the latter years of the third or beginning of the second century before Christ. It is peripteral Doric, and measures 33 metres by 18. Six columns stand at each end and eleven on either side. The foundations are chiefly trachite, but the temple and columns were marble. Each column was $1\frac{1}{4}$ metres in diameter at the base. There remain traces of two groups of statuary. After the fall of the temple (probably in the earthquake of 554 A.D.), a Byzantine chapel was constructed in the remains of the pronaos.

Little is known about the interior. A great figure of Asklepios would stand in the naos, but it is not known what was its material. It was probably marble, as remains of a large marble serpent have been discovered.

Great porticos surrounded the temple on the east, south, and west, the whole structure measuring about 108 metres east and west, and 70 north and south. It seems probable that the east and west wings of the stoa were occupied as abatons, or sleeping places, for the sick, like those at Epidaurus, one for male, the other for female

patients. Here they reposed on their couches for the night (and a few also during the day), hoping for illuminating nocturnal visions from the god, for visits from the sacred serpents, and for miraculous healing. Here the evening prayers were recited to the gods to whom gifts were presented on the tables and altars within the abatons, and all the occupants were encouraged by the priest to hope for succour from Asklepios and Hygeia. The abaton was a lofty colonnade freely open to the mountain breezes, and much resembled the shelter balconies used in our modern sanatoria. The mere exposure to a pure atmosphere was a most potent health giver. It is interesting to note that the idea of incubation close to a temple or church as a means of cure for the sick still exists at Tenos and other of the Greek Islands. (*Vide* the writings of Dr. Rouse.)

The sacred grove of cypresses surrounded the upper and middle terraces.

Higher up in the hills were two remarkable springs. One known as the fountain of Hippocrates may be approached by a short tunnel of Mycenæan architecture, at the end of which is a curious dome-like chamber with seats round its walls and a fountain in the centre. The second is the celebrated "red water," or chalybeate, spring, no doubt of great service in cases of anæmia. Convalescents were encouraged to mount the hill, and drink from one or other of these springs at its source. It is not yet decided whether any of the numerous lines of earthenware piping discovered near the Asklepieion conveyed these waters down to the various fountains and baths in the precinct.

Multitudes of works of art existed here in ancient times, but all have been stolen or destroyed. A celebrated statue of Alexander the Great of bronze is recorded to have had rather rough hair on the head, in the interstices of which there grew a seedling lily. Many small fragments of marbles of great artistic merit have been discovered, and vast numbers of remains of inscriptions, into details of which limitation of space prevents my entering. No theatre, or stadium, existed at the Asklepieion itself, those on the way to the town of Cos being employed for the entertainment of the sick and at the time of the great festivals.

The research thus far has proved extremely interesting, and Dr. Herzog is to be congratulated on his learning and success as an excavator.

With the exception perhaps of the mysteries of Eleusis nothing in the religious life of the Greeks was more solemn or more beautiful than the ritual of Asklepios, and thus it proved the most enduring form of paganism, out-living the worship of Zeus, Hera, Poseidon, or the other deities. It long held out against the efforts of the Christian teacher, and in the end a Christian object of devotion took the place of Asklepios, while the incubation and medical treatment went on as before.

A Health Temple such as this presented a scene attractive from its peace and beauty. In a situation of remarkable charm by reason of the mountains, plain, and sea, the rich vegetation, beautiful flowers, and verdant grove, all that supreme art could offer to please the eye was presented to the visitants of the sanctuary in the form of architecture, painting, and sculpture. The gods of the heathen pantheon were shown in their most attractive guise, suggesting the brightness and hope of human life to the young and to those who were likely to recover; while to the old and to those whose sickness was incurable the calm and solemn forms of Demeter and Persephone suggested patience and the hope of a pure spiritual after life free from all forms of bodily infirmity.

The priest-physicians were commonly men of education and philosophic training, who taught the skilled culture of life and the need to live simply and according to nature, along with the wisdom of seeking happiness in the love of all that was good and beautiful in nature, art, and literature.

The daily routine of treatment by baths, exercises, the use of medicaments, and regulated diet, amid this pure mountain air, was varied by the solemn religious processions of the white-robed priests and priestesses, with music of flute and cithara, and the singing of pæans and Orphic hymns, by solemn prayers and sacrifices. One of these prayers has come down to us:—

Oh, ye children of Apollo, who have oft stilled the waves of suffering among men, and lighted the lamp of safety for those who sojourn by sea and land, though your glory be great, accept this prayer, which in sleep and vision ye have inspired. I pray you order it aright, according to your loving kindness for men. Preserve me from sickness, endue my body with such health as may suffice it to obey the soul within, that I may pass the days of my life unhindered and in peace.

Sources of interest were supplied to the visitants to the temple by the performance in the theatre of the tragedies of Sophocles, Euripides, and other poets, or by such comedies as those of Aristophanes. These plays would so immerse the invalid and the convalescent in pathos or in merriment as to banish for the time individual troubles. The studious man would at his pleasure repose in the shelter-seats and dream over manuscripts of history, drama, or poesy, which he borrowed from the library.

A routine of life such as this would tend to a calm and hopeful condition of mind, eminently helpful to recovery from the minor forms of illness.

One cannot but suppose that in this Asklepieion in particular the influence of Hippocrates was great and beneficial. His intense earnestness, his devoted and life-long labours to help the sick and the maimed, to lessen suffering of all kinds, and to learn and to teach new truth must have been priceless.

His influence tended alike to the acquisition of what was new

and valuable, and to the denial and the casting off of all that was useless and superstitious.

While he revered the supreme gods, he had more confidence in rest, pure air, exercise, diet, remedies, and on the restorative powers of nature than on the interposition of Asklepios or the influence of the sacred serpents.

In fact, in this building, under the guidance of Hippocrates, medicine probably arose as a helpful instrumentality, based on foundations scientific and practical, and in a nobler form than the world had ever seen, for the relief of the sufferings of mankind.

[R. C.]